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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,259	12/04/2001	Keiji Hayashi	2803.66027	2802

7590 12/06/2004  
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EXAMINER

LUEBKE, RENEE S

ART UNIT PAPER NUMBER

2833

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/005,259

Applicant(s)

HAYASHI ET AL.

Examiner

Renee S. Luebke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-22,28 and 53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-7 is/are allowed.
- 6) ☒ Claim(s) 8,10-22 and 28 is/are rejected.
- 7) ☒ Claim(s) 53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/4/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Claims 8, 10-22 and 53 are objected to because of the following informalities:

a. Claim 8 is unclear. It requires that the air be blown to a part of the tubes that is between the tubes. How can a location be between, yet part, of an object?

b. Claim 10 lacks antecedent basis for "the liquid mercury" on line 2.

c. Claim 22 lacks antecedent basis for "the liquid mercury" on lines 2-3.

d. Claim 53 does not further limit claim 1 from which it depends. The heat conduction member of claim 1 that is "attached to said reflector" and "in contact with . . . said discharge tube" is inherently "arranged between said discharge tube and said reflector" as required by claim 53.

Appropriate corrections are required.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 10-22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi, et al. This backlight comprises a discharge tube 10, a reflector 20, and a cooling device 70, 40, 30, 32. Sekiguchi does not explicitly disclose that mercury is used in the fluorescent lamp. However, would have been obvious to use mercury in the fluorescent lamp.

Applicant argues that Sekiguchi does not teach the use of mercury in the lamp. However, the lamp of Sekiguchi is a fluorescent lamp. Although there are now a few alternatives to mercury (hence this obviousness rejection instead of a rejection based on anticipation), liquid mercury is by far the most common material used for this purpose. In fact, the presence of mercury is generally part of a definition of a fluorescent lamp (see enclosed web site definitions). Therefore, lacking specific instructions to the contrary, it would have been

obvious to assemble the device of Sekiguchi with a fluorescent lamp that does contain mercury.

Applicant further argues that the mercury does not collect in a particular portion of the tube. However, as a result of the inherent properties of the material, the mercury does collect at the coolest part of the tube (see Nelson, column 3, lines 57-58). During operation, the cooling device causes the adjacent part of the tube to be coolest. The cooling device of Sekiguchi is apart from the ends of the tube (column 2, lines 52-54). Therefore, during operation, mercury in the tube of Sekiguchi does "collect at a first position apart from the end of said discharge tube" and does meet the claim limitations.

Applicant has not separately argued the limitations of dependent claims 11-21, nor other limitations of independent claims 22 and 28. Therefore, for the sake of expedience, discussion of how these limitations are met by Sekiguchi will not be repeated.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Sekiguchi. Davis discloses a lamp assembly comprising a plurality of discharge tubes (Column 6, Line 3), a covering 30 adjacent said discharge tubes, and blowing means 36 for blowing air to a part of said discharge tubes between said discharge tubes. The blowing means blows air around the entire area of the tubes and therefore blows air into any one particular part of the tubes. Davis lacks a reflector. However, Sekiguchi teaches a reflector for directing the illumination toward a particular direction (as is well known in the art). It would have been obvious to include a reflector in the Davis lamp assembly to direct the illumination so that it could be used more efficiently as a backlight.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The discharge tubes of Hoes, deceased, and Dobashi,

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et al. comprises adhesive and a reflector, respectively, similarly to the present device but lack a heat conduction member that locally cools a part of the tube. Hayashi, et al. teaches the cooling and concentration of mercury in a local portion of a discharge device.

6. Claims 1 and 3-7 are allowed.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. It is suggested that responses to this final action be faxed to:  
(703) 872-9306

Please refrain from sending a confirmation copy, as noted in 37 CFR 1.6(d) and 1.8(b).

Alternatively, responses may be mailed to:  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mrs. Renee Luebke at (571) 272-2009. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mrs. Paula Bradley, can be reached at (571) 272-2800, extension 33.



Renee S. Luebke  
Primary Patent Examiner  
December 2, 2004